



# **Part 45**

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## **FTP/SFTP Server**

## Your Raspberry Pi as FTP Server

FTP (File Transfer Protocol) can be used to transfer files between a Raspberry Pi and another computer. Although with default program sftp-server of Raspbian the users with sufficient privilege can transfer files or directories, access to the filesystem of the limited users is also required often. Follow the steps below to set up an FTP server

### Install Pure-FTPD

First, install Pure-FTPD using the following command line in Terminal

```
sudo apt install pure-ftpd
```

## Basic Configurations

We need to create a new user group named `ftpgroup` and a new user named `ftpuser` for FTP users, and make sure this "user" has **no** login privilege and **no** home directory:

```
sudo groupadd ftpgroup  
sudo useradd ftpuser -g ftpgroup -s /sbin/nologin -d /dev/null
```

### FTP Home Directory, Virtual User, and User Group

For instance, make a new directory named `FTP` for the first user:

```
sudo mkdir /home/pi/FTP
```

Make sure the directory is accessible for `ftpuser`:

```
sudo chown -R ftpuser:ftpgroup /home/pi/FTP
```

Create a virtual user named `upload`, mapping the virtual user to `ftpuser` and `ftpgroup`, setting home directory `/home/pi/FTP`, and record password of the user in database:

```
sudo pure-pw useradd upload -u ftpuser -g ftpgroup -d /home/pi/FTP -m
```

A password of that virtual user will be required after this command line is entered. And next, set up a virtual user database by typing:

```
sudo pure-pw mkdb
```

Last but not least, define an authentication method by making a link of file `/etc/pure-ftpd/conf/PureDB`, the number 60 is only for demonstration, make it as small as necessary:

```
sudo ln -s /etc/pure-ftpd/conf/PureDB /etc/pure-ftpd/auth/60puredb
```

Restart the program:

```
sudo service pure-ftpd restart
```

Test it with an FTP client, like FileZilla.

## More Detailed Configurations:

The configuration of Pure-FTPd is simple and intuitive. The administrator only needs to define the necessary settings by making files with option names, like `ChrootEveryone`, and typing `yes`, then storing in the directory `/etc/pure-ftpd/conf`, if all FTP users are to be locked in their FTP home directory (`/home/pi/FTP`). Here are some recommended settings

```
sudo nano /etc/pure-ftpd/conf/ChrootEveryone
```

Type `yes`, and press `Ctrl + X`, `Y`, and `Enter`.  
Likewise,

Make a file named `NoAnonymous` and type `yes`;  
Make a file named `AnonymousCantUpload` and type `yes`;  
Make a file named `AnonymousCanCreateDirs` and type `no`;  
Make a file named `DisplayDotFiles` and type `no`;  
Make a file named `DontResolve` and type `yes`;  
Make a file named `ProhibitDotFilesRead` and type `yes`;  
Make a file named `ProhibitDotFilesWrite` and type `yes`;  
Make a file named `FSCharset` and type `UTF-8`;

...  
Restart pure-ftpd again and apply the above settings.

```
sudo service pure-ftpd restart
```

For more information of Pure-FTPd and documentation, please get on official website of Pure-FTPd.

## Your Raspberry Pi as SFTP server

As mentioned in the FTP server, SFTP server is the default program and hence already installed on your Raspberry Pi.

The SSH File Transfer Protocol is a network protocol that provides file access, file transfer, and file management functionalities over SSH.

By using SFTP, you can easily change, browse, and edit files on your Raspberry Pi. SFTP is easy to set up. You only have to enable SSH. For security reasons, since the November 2016 release of Raspbian, the SSH server has been disabled by default.

If not yet enabled, enable SSH this way

```
sudo systemctl enable ssh  
sudo systemctl start ssh
```

or use

```
sudo raspi-config
```

in a terminal window. Now select Interfacing Options, navigate to and select SSH, choose Yes, select Ok, choose Finish

On your Windows PC you can either use the WinSCP SFTP client. Follow the instructions on the WinSCP website to install the client or FileZilla client

Launch FileZilla and go to File > Site manager.

Fill in the IP address or hostname, username and password (by default the username is pi and the password raspberry) of your Raspberry Pi in the dialog and choose SFTP as the protocol. Click Connect and you will see the home folder of the user.